

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A process for the manufacture of beadlet preparations of fat-soluble substances in a water-soluble or water-dispersible non-gelling matrix, which process comprises

(a) feeding in the upper section of a vertical spray tower, through a spray nozzle an aqueous emulsion of said fat-soluble substance(s) and said matrix component, and, through separate inlets, powderous starch and a stream of hot air,

(b) feeding in the lower section of said spray tower a stream of cold air to form a fluidized bed of starch-covered beadlets comprising said matrix component said fat-soluble substances, and

(c) collecting said beadlets from the fluidized bed and discharging them to a dryer.

2. (original) A process as in claim 1 wherein the spray zone has a temperature of about 40 °C to about 200 °C, preferably about 60 °C to about 120 °C and the fluidized bed has a temperature of about 0 °C to about 40 °C, preferably about 5 to about 20 °C.

3. (currently amended) A process as in claim 1 ~~or 2~~ wherein the aqueous emulsion, starch and a stream of hot air is fed into the spraying tower through an arrangement of nozzles ~~substantially as shown in Figure 2 and~~ comprising

(a) a first, hollow cone the upper and wider end of which is closed and carries one or more inlets for a starch/air dispersion;

(b) a second, inner cone fitted into the first, hollow outer cone in such a manner that it points in upward direction into said first cone, leaving at its end a small circular slot between its outer surface and the inner surface of the first cone;

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(c) a inlet tube with closed end and rotary atomizer protruding in downward direction over the second cone and ending with a rotary atomizer or pressure atomizer; and

(d) a circular air inlet channel surrounding the outer cone and ending slightly above the circular slot that is formed by the cones.

4. (currently amended) A process as in ~~any one of claims 1-3~~ claim 1 wherein the matrix component is a lignin derivative.

5. (original) A process as in claim 4 wherein the lignin derivative is a lignin sulfonate.

6. (currently amended) A process as in ~~any one of claims 1-5~~ claim 1 wherein the fat-soluble substance is vitamin A, D, E and K, a carotenoid, a polyunsaturated fatty acid, an oil or a fat.

7. (currently amended) A process as in ~~any one of claims 1-5~~ claim 1 wherein the fat-soluble substance is β -carotene, astaxanthin, apocarotenal, canthaxanthin, apoester, citranaxanthin or zeaxanthin.

8. (currently amended) An arrangement of nozzles ~~substantially as shown in Figure 2, and~~ comprising (a) a first, hollow cone ~~the~~ having an upper and wider end of which is closed and carries one or more inlets for a starch/air dispersion; (b) a second, inner cone fitted into the first, hollow outer cone in such a manner that it points in upward direction into said first cone, leaving at its end a small circular slot between its outer surface and the inner surface of the first cone; (c) a rotating inlet tube with closed end and small side openings protruding in downward direction over the second cone and ending with a rotary atomizer or pressure atomizer; and (d) a circular air inlet channel surrounding the outer cone and ending slightly above the circular slot that is formed by the cones.

9. (Cancelled)